TECHNICAL SUPPORT DOCUMENT

TECHNICAL INFORMATION PRESENTED IN REVIEW OF AN APPLICATION FOR AN "AUTHORITY TO CONSTRUCT" FOR A MODIFIED STATIONARY SOURCE OF REGULATED AIR POLLUTANTS

SUBMITTED BY:

CH2M Hill, Inc.
on behalf of:

Republic Services
770 East Sahara Avenue
Las Vegas, Nevada 89104

FOR:

Republic Dumpco, Inc.

LOCATION:

Apex Waste Management Center
East of Interstate 15/US 93 Junction,
Apex, Nevada 89124

SOURCE: 395
MODIFICATION: 5
REVISION: 0

Prepared by:
Beth Davis-Schaedler

Clark County Department of Air Quality Management
December 2010

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Source Information

Preparer:	Beth Davis-Schaedler
Date:	December 31, 2010
Company:	Republic Services
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Subject:	Republic Dumpco, Inc. Apex Waste Management Center East of Interstate 15/US 93 Junction Apex, Nevada, 89124 T18S, R64E, S10 & 18 T18S, R63E, S24

Source Description

Republic Dumpco, Inc. (Republic) is a producer of construction sand and gravel and a municipal solid waste landfill. The source operates under Standard Industrial Classification Code (SIC) 4953: Refuse Systems and 1442: Construction Sand and Gravel and North American Industrial Classification System Code (NAICS) 562212 – Solid Waste Landfill and 212321 – Construction Sand and Gravel Mining. Republic Dumpco Inc. is a major source for PM_{10}, NO_x, CO, SO_x, HAP, and TCS (H_2S) and is a minor source for $PM_{2.5}$ and VOC in the Apex hydrographic basin.

Permitting Action

Republic applied for a modification to their 2002 Title V Operating Permit (OP). The source requested that the Aggregate Plant throughputs be decreased and the emission factors be corrected from uncontrolled AP-42 factors to the controlled factors for Crushed Stone Processing and Pulverized Mineral Processing. The blasting operations PM_{10}, NO_X and CO emissions have been calculated and accounted for in emission unit A127. This will be incorporated into the Title V Operating Permit renewal.

Republic requested that all the unpaved hauls roads be placed under one emission unit and that the Vehicle Miles Travelled (VMT) be modified to the correct miles for both paved and unpaved haul roads. The source requested the incorporation the PM_{10} emissions of waste placement and stockpiles. Republic also requested to have all the diesel generators and tipper engines changed from fuel usage to hours of operation. This did not change emissions for any of the generators or tipper engines. The nomenclature for all the emission units for the Municipal Solid Waste Landfill (MSWL) were changed to "W" per the sources request. These will be incorporated into the Title V Operating Permit renewal.

Republic also requested to add a 115 horsepower John Deere diesel tipper engine to the MSWL, but not be included in the Title V Operating Permit renewal.

Acronyms

Table 1: Acronyms

Acronym	Term
ANFO	Ammonium Nitrate and Fuel Oil
AQR	Clark County Air Quality Regulations
ATC	Authority to Construct Certificate or Authority to Construct
BCC	Clark County Board of County Commissioners
BHP	Brake Horse Power
CAO	Field Corrective Action Order
CE	Control Efficiency
CF	Control Factor
CFR	United States Code of Federal Regulations
CO	Carbon Monoxide
CPI	Urban Consumer Price Index
DAQEM	Clark County Department of Air Quality & Environmental Management
DOM	Date of Manufacture
EF	Emission Factor
EPA	United States Environmental Protection Agency
EU	Emission Unit
H_2S	Hydrogen Sulfide
HAP	Hazardous Air Pollutant
HP	Horse Power
kW	kiloWatt
LON	Letter of Noncompliance
MMBtu	Millions of British Thermal Units
M/N	Model Number
MSWL	Municipal Solid Waste Landfill
N/A	Not Applicable
NAC	Nevada Administrative Code
NAICS	North American Industry Classification System
NEI	Net Emission Increase
NO_X	Nitrogen Oxides
NOV	Notice of Violation
NRS	Nevada Revised Statutes
NSPS	New Source Performance Standards
NSR	New Source Review
OP	Operating Permit
PM_{10}	Particulate Matter less than 10 microns
ppm	Parts per Million
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
RBLC	EPA's RACT/BACT/LAER Clearinghouse database
scf	Standard Cubic Feet
SCC	Source Classification Codes
SCR	Selective Catalytic Reduction
SIC	Standard Industrial Classification
SIP	State Implementation Plan
S/N	Serial Number
SO_X	Sulfur Oxides
TCS	Toxic Chemical Substance
TRS	Total Reduced Sulfur

Acronym	Term
TSD	Technical Support Document
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
VOC	Volatile Organic Compound

Emission Units

Table 2: List of Emission Units for the Aggregate Plant

EU	Description	Rating (tph)	Make	Model #	Serial #	SCC
Primary Plant						
A01	Mining/Excavation	4,825				30502033
A02	Grizzly 1	1,650				30502013
A04	Grizzly to Primary Crusher 1 Primary Crusher 1 Primary Crusher 1 to Belt 1	600	Crush Boss	HSI 400	6356511	30502001
A07	2 Belt System (Drop from Grizzly and Belt 1 to Belt 2)	1,650				30502006
A08	Grizzly 2	600				30502013
A09	Grizzly 2 to Primary Crusher 2 Primary Crusher 2 Primary Crusher 2 to Belt 3	600	Crush Boss	HSI 400	6356536	30502001
A12	3 Belt System (Grizzly to Belt 2, Belt 3 to Belt 4 and Belt 4 to Belt 5)	1,650				30502006
	2 Belt Transfers (Belt 2 to Belt 5 and Belt 5 to Stacker S1)	2,500				30502006
A16	Stacker S1	2,500				30502006
A17	7 Belt System (Belt Feeders 6, 7 and 8 to Belt 9, Belt 9 to Belt 10, Belt 10 to Belt 11, Belt 11 to Belt 12 and Belt 12 to Stacker S2)	2,500				30502006
A22	Stacker S2	2,500				30502006
Gabion Plant						
A23	Belt 12 to Belt 13 (From Primary Plant)	415				30502006
A25	Belt 13 to Gabion Screen SC1 Gabion Screen SC1 Gabion Screen SC1 to Belt 14 Gabion Screen SC1 to Belt 15 Gabion Screen SC1 to Belt 16	415	Telsmith	6x16 TD	275M101C1607	30502002
A27	Belt 14	210				30502006

EU	Description	Rating (tph)	Make	Model #	Serial #	SCC
A28	Stacker S3	210				30502006
A30	Belt 15	105				30502006
A31	Stacker S4	105				30502006
A33	Belt 16	105				30502006
A34	Stacker S5	105				30502006
Secondary Plant						
A35	Belt Feeder 17 to Belt 18	1,525				30502006
A37	Belt 18 to Triple Deck Screens SC2 and SC3	900	JCI	6x20 TD	SAD1554A	30502002
	Triple Deck Screen SC2					
	Screen SC2 to Belt 19					
	Screen SC2 to Belt 21					
	Screen SC2 to Belt 26					
	Screen SC2 to Belt 31					
A38	Triple Deck Screen SC3	900	JCI	6x20 TD	96H02B32	30502002
	Screen SC3 to Belt 21					
	Screen SC3 to Belt 32					
A40	2 Belt System (Belt 19 to Belt 20 and Belt 20 to Stacker S6)	900				30502006
	Belt 32 to Belt 20	900				
A42	Stacker S6	900				30502006
A44	2 Belt System (Belt 21 to Belt 22 and Belt 22 to Stacker S7)	300				30502006
	Additional Transfer from SC3 (via Belt 21) Included					
A46	Stacker S7	300				30502006
A47	2 Belt Feeders to Belt 25	500				30502006
A49	2 Belt System (Belt 26 to Belt 27 and Belt 27 to Stacker S8)	500				30502006
A51	Stacker S8	500				30502006
A52	2 Belt Feeders to Belt 30	500				30502006
A58	Belt 31 to HSI 1 Crusher	600	Crush Boss	HSI 400	101400	30502002
	HSI 1 Crusher					
	HSI 1 Crusher to Belt 33					
A60	Recirculation Belt 33					30502006
Sand Plant						
A62	Belt 25 to VSI Crusher 1	200	CEMCO	70	AVE0195170	30502003
	Belt 35 to VSI Crusher 1					
	VSI Crusher 1					
	VSI Crusher 1 to Belt 34					
A65	Belt 34 to Screen SC4	300	JCI	6x20 TD	96H05D32	30502003
	Screen SC4					

EU	Description	Rating (tph)	Make	Model #	Serial #	SCC
	Screen SC4 to Belt 35					
	Screen SC4 to Belt 39					
A69	3 Belt System (Belt 36 to Belt 37, Belt 37 to Belt 38 and Belt 38 to Stacker S9)	210				30502006
A72	Stacker S9	210				30502006
A74	3 Belt System (Belt 39 to Belt 40, Belt 40 to Belt 41 and Belt 41 to Stacker S10)	200				30502006
A77	Stacker S10	200				30502006
Cone Plant						
A79	Belt 30 to Cone Crusher 1	300	Nordberg	HP 300	30310657	30502003
	Cone Crusher 1					
	Cone Crusher 1 to Belt 42					
A82	Belt 42 to Screens SC5 and SC6	450	JCI	6x20 TD	99H03K32	30502003
	Triple Deck Screen SC5					
	Screen SC5 to Belt 43					
	Screen SC5 to Belt 49					
	Screen SC5 to Belt 51					
A83	Triple Deck Screen SC6	450	JCI	7x20 TD	43J0491	30502003
	Screen SC6 to Belt 45					
A85	2 Belt System (Belt 43 to Belt 44 and Belt 44 to Stacker S11)	210				30502006
A87	Stacker S11	210				30502006
A89	4 Belt System (Belt 45 to Belt 46, Belt 46 to Belt 47, Belt 47 to Belt 48 and Belt 48 to Stacker S12)	300				30502006
A93	Stacker S12	300				30502006
A95	2 Belt System (Belt 49 to Belt 50 and Belt 50 to Belt 30)	250				30502006
A98	4 Belt System (Belt 51 to Belt 52, Belt 52 to Belt 53, Belt 53 to Belt 54 and Belt 54 to Stacker S13)	450				30502006
	Belt 53 to Belt 55	150				
A102	Stacker S13	450				30502006
A104a	Belt 55 to VSI Crusher 2	150	CEMCO	80	ADEV03991 80V	30502003
	VSI Crusher 2					
	VSI Crusher 2 to Belt 39					
Wash Plant						
A106	Belt Feeder 56 to Belt 57	1,200				30502006
A108	Belt 57 to Screens SC7 and SC8	605	JCI	6x20 TD	96H01B32	30502003
	Triple Deck Screen SC7					

EU	Description	Rating (tph)	Make	Model #	Serial #	SCC
	Screen SC7 to Sand Screw 1					
	Screen SC7 to Belt 61					
A109	Triple Deck Screen SC8	605	Cedar Rapids	TSS 6203-32	54400	30502003
	Screen SC8 to Sand Screw 2					
	Screen SC8 to Belt 60					
	Screen SC8 to Belt 61					
A112	Sand Screw 1 to Belt 58	70				30502006
A113	Sand Screw 2 to Belt 58	70				30502006
A114	2 Belt System (Belt 58 to Belt 59 and Belt 59 to Stacker S14)	140				30502006
A116	Stacker S14	140				30502006
A118	Belt 60 to Stacker S15	550				30502006
A119	Stacker S15	550				30502006
A122	2 Belt System (Belt 61 to Belt 62 and Belt 62 to Storage Hopper)	415				30502006
A124	Storage Hopper to Belt 63	415				30502007
A125	Belt 63 to Rock Truck	415				30502006
A126	Rock Truck Dumping	415				30502031
Landfill Cover Plant						
A127	Blasting	24,200 ft^2/hr				30502009
A128	Grizzly 3	1,800				30502013
A130	Grizzly 3 to Primary Crusher 2	400	Crush Boss	400	400504	30502001
	Primary Crusher 2					
	Primary Crusher 2 to Belt 64					
A133	Grizzly 3 to Belt 64	1,400				30502006
	2 Belt System (Belt 64 to Belt 65 and Belt 65 to Belt 66)	1,800				
A136	Belt 66 to Screen SC9	1,800	Cedar Rapids	8x20 TD	46531	30502003
	Belt 75 to Screen SC9					
	Screen SC9					
	Screen SC9 to Belt 67					
	Screen SC9 to Belt 70					
	Screen SC9 to Belt 72					
	Screen SC9 to Belt 74					
A138	3 Belt System (Belt 67 to Belt 68, Belt 68 to Belt 69 and Belt 69 to Stacker S16)	1,000				30502006
A141	Stacker S16	1,000				30502006
A143	2 Belt System (Belt 70 to Belt 71 and Belt 71 to	500				30502006

EU	Description	Rating (tph)	Make	Model #	Serial #	SCC
	Stacker S17)					
A145	Stacker S17	500				30502006
A147	2 Belt System (Belt 72 to Belt 73 and Belt 73 to Stacker S18)	300				30502006
A149	Stacker S18	300				30502006
A151	Belt 74 to Cone Crusher 2 Cone Crusher 2 Cone Crusher 2 to Belt 75	200	Svedala	S-3000	03JA08802	30502002

Table 3: List of Emission Units for MSWL

EU	Description	Rating	Make	Model #	Serial #	SCC
H01	Haul Roads – Paved	1,237,592 VMT/yr				30502011
H02	Haul Roads - Unpaved	321,920 VMT/yr				30502011
W08	Waste Placement	13,008,600 tons/yr				50200602
W09	Stockpiles (Active/Inactive)	123.11 acres				30502507
W200	Diesel Generator: DOM 1994	2,593 hp	CAT	3516	5SJ00130	20200102
W201	Diesel Generator: DOM 1996	2,593 hp	CAT	3516	7RN00440	20200102
W203	Diesel Generator: DOM 1998	1,072 hp	CAT	3412CDITA	2WJ02059	20200102
W204	Diesel Generator: DOM 1998	1,108 hp	CAT	3412CDITA	2WJ01887	20200102
W205	Diesel Tipper Engine: DOM Pre-2006	150 hp	CAT	3208	35601941	20200102
W206	Diesel Generator: DOM Pre-2006	188 bhp	Cummins	6CT8.3-G2	F99093314	20200102
W207	Diesel Generator: DOM Pre-2006	188 bhp	Cummins	6CT8.3-G2	F99093315	20200102
W208	Diesel Generator: DOM Pre-2006	77 bhp	Isuzu	QD145 ”6BD1”	3647886	20200102
W209	Diesel Generator: DOM Pre-2006	315 hp	CAT	3406	90U16559	20200102
W210	Diesel Tipper Engine: DOM 2007	173 bhp	CAT	3056E	35603786	20200102
W211	Diesel Tipper Engine: DOM 2007	173 bhp	CAT	3056E	35603782	20200102
W212	Diesel Tipper Engine: DOM 2007	115 hp	John Deere	4045H	PE4045H63 8663	20200102
W213	Diesel Tipper Engine, 115 hp, DOM 2006	115 hp	John Deere	4045HF275	TBD[1]	20200102

[1]TBD = To Be Determined

Table 4: New Emission Units Nomenclature for the MSWL

NEW EU#	OLD EU#	Description	Model No.	Serial No.	SCC
H01	F01	Haul Road, Paved (2.0 miles Round Trip)	N/A	N/A	30502011
H02	D05	Waste Soil Truck Road, Unpaved	N/A	N/A	30502011
	D06	Petroleum Contaminated Liquid Haul Road, Unpaved	N/A	N/A	
	E04	Waste Truck Haul Road, Unpaved	N/A	N/A	
	E05	Cover Material Truck Haul Road, Unpaved	N/A	N/A	
	G01	Waste Truck Haul Road, Unpaved	N/A	N/A	
	G02	Septic Truck Haul Road, Unpaved			
	G03	Cover Material Hauling from Aggregate Plant, Unpaved	N/A	N/A	
	G04	Cover Material Hauling from Excavation, Unpaved	N/A	N/A	
W01	D01	Bulk Material Unloading	N/A	N/A	30510499
	D02	Stationary Grizzly Deck	N/A	N/A	30504034
	D03	Material Transfer to Soil Treatment Cell	N/A	N/A	30510199
	D04	Soil Trans from Soil Treatment Cell	N/A	N/A	30510199
W02	D07	Waste Processing	N/A	N/A	50100402
W03	E01	Cover Material Dumping	N/A	N/A	30510499
	E02	Transfer to Face Cover Material	N/A	N/A	30510199
W04	E03	VOC from Landfill Gas	N/A	N/A	50100402
W05	G05	Cover Material Handing	N/A	N/A	30502512
W06	G08	1-2,500 aboveground gasoline storage tank, Regular	N/A	N/A	40600306
W07	G09	Enclosed Combustor, Callidus Flare	G8844		50100410
W10	G26	John Zink Candlestick (open) Flare with desulfurization system	10x30 LFS & Blower Skid LFF		50100410
W100	G22	Fugitive Emissions from Landfill (based on 2006 Estimates)	N/A	N/A	50100402
W205	G10	Caterpillar Diesel Tipper Engine	3208	35601941	20200102
W206	G14	Cummins Diesel Generator	6CT8.3-G2	F99093314	20200102
W207	G15	Cummins Diesel Generator	6CT8.3-G2	F99093315	20200102
W208	G16	Isuzu Diesel Generator	QD145 ”6BD1”	3647886	20200102
W209	G17	Caterpillar Diesel Generator	3406	90U16559	20200102
W210	G23	Caterpillar Diesel Engine	3056E	35603786	20200102
W211	G24	Caterpillar Diesel Engine	3056E	35603782	20200102
W212	G25	John Deere Tipper Engine	4045H	PE4045H638663	20200102

Calculation of PTE and NEI

Aggregate Plant

All emission factors in the aggregate plant are taken from AP-42 Table 11.19.2-2 unless otherwise stated here. The mining/excavation (EU: A01) emission factor is estimated from

adding together two controlled conveyor drop points (0.000046*2 = 0.00092 lb/ton). The grizzly emission factors are estimated from the truck unloading factor of 11.19.2-2.

Blasting

The blasting (EU: A127) emission factor for PM_{10} is taken from AP-42 Table 11.9-1 for blasting. Las Vegas Paving working under Republic uses ammonia nitrate – fuel oil (ANFO) as the blasting agent for their aggregate mining. The primary air pollutants associated with blasting with ANFO are NO_x, CO, and PM_{10}.

The source of CO and NOx emissions originate from the hydrocarbons and ammonium-nitrate contained in the ANFO. CO and NOx emission factors were determined by using Table 1 from the Summary of Data for Shots of ANFO from "*A Technique for Measuring Toxic Gases Produced by Blasting Agents"* (Mainiero, Richard J., 23rd Annual Conference on Explosives and Blasting Technique, February 1997). In the study, emissions were studied by various techniques for measuring toxic gases produced by blasting agents, which resulted in emission factors for the range of percent fuel oil from 5.0 percent to 7.0 percent. Las Vegas Paving uses 5.8 percent fuel oil in the ANFO when blasting. Because there are numerous emissions for 5 percent and 6 percent, the emissions were averaged for each percent and calculated to get the correct emissions rate for 5.8 percent. Subsequently, emissions calculations were based on the source using 1,418 tons/year of ANFO.

Emission Factor for CO:

There are 22.4 liters in a mole = ( )

The molecular weight of CO is 28.01

Where 5% averaged = 8.09 and 6% averaged 18.47

Assuming the percent of Fuel Oil in ANFO used is 5.8% then 5.8% would equal 16.39

Using to get the Emission Factor of CO

Calculating the CO emissions from ANFO in ton per year.

The source uses 1,418 tons of ANFO per year.

ANFO per blast or hour:

Emission Factor for NO_x:

There are 22.4 liters in a mole (——)

The molecular weight of CO is 46.00 —— assuming that NO_x is NO_2

Where 5% averaged = 4.35— and 6% averaged 1.27—
Assuming the percent of Fuel Oil in ANFO used is 5.8% then 5.8% would equal 1.89—

Using — to get the Emission Factor of NO_x

Calculating the NO_x emissions from ANFO in tons per year.

The source uses 1,418 tons of ANFO per year.

ANFO per blast or hour:

Table 5: Blasting Calculations

EU	Description	Throughput (A)		Pollutant	EF	PTE	
		ft^2/hr	ft^2/yr			lbs/hr	tons/ yr
A127	Blasting	24,200	1,733,886	PM_{10}	$EF=0.52[0.000014(A)^{1.5}]$	27.41	8.31
		tons/ hr	tons/yr		lbs/ton		
		32.5	1,418	NO_X	7.76	252.20	5.50
		32.5	1,418	CO	41.06	1334.45	29.11

MSWL

Haul Roads

Table 6: Haul Road Calculations

EU	Description	VMT/hr	VMT/yr	lbs/VMT	CF	PTE	
						lbs/hr	tons/yr
H01	Haul Road: Paved	141.00	1,237,592	7.57	0.02	21.35	93.69
H02	Haul Road: Unpaved	37.00	321,920	7.57	0.10	28.01	121.85
PM_{10} Subtotal						**49.36**	**215.53**

Vehicle traffic entering and leaving the site is controlled at the main gate of the source. Waste and rock hauling vehicles entering the site are counted and the destination of each truck noted (i.e. municipal waste, septic, rock). The routes these vehicles use are documented and the distance measured using satellite imagery. The miles on paved and unpaved roads are then calculated by multiplying the number of vehicles by the miles of the truck route.

Other routine operations within the site have been monitored and conservative estimates developed. These estimates are designed to over report the actual vehicle miles traveled to ensure compliance. The conservative approach is cost effective for Republic to demonstrated compliance without spending high labor cost. Assumptions will be periodically verified. The activities, which are conservatively high estimates, are listed in Table 6.

Table 7: Routine Operations at Republic Dumpco – Apex Waste Management Center

Activity	Available Data	Activity Reported for Emissions Tracking
Employee and Visitor Access	Approximately 100 employees enter and leave the site on week days and 50 employees work on Saturday and Sunday. Very few deliveries occur on weekends and typically no visitors	Calculate emissions based on 150 employee/visitor trips on week days, 75 employee/visitor trips on weekends. All travel on paved road.
Water Trucks	Republic reviewed the water use for the last two years and the highest rate of use was 160,000 gallons in one day. Smallest water truck is 8,000 gallons. Based on aerial map, approximately 2.6 miles of unpaved road on longest water truck trip.	Calculate emissions based on 20 round trip loads per day, 4 miles on unpaved roads per trip.
Cover Material Hauling	Republic tracks cover material placement. Average number of loads	Calculated emission based on 45 trips per day assuming 0.75 miles on paved

Activity	Available Data	Activity Reported for Emissions Tracking
	per day is 30. Longest trip from source to working face is 0.75 miles paved and 0.75 miles unpaved.	road and 0.75 miles on unpaved road.
Generator Servicing	One trip per day to each of the two generators for fueling and servicing. Longest distance to generator is 3 miles unpaved, 2 miles paved.	Calculate emission based on 3 trips per day, 3 miles unpaved and 2 miles paved.
Utility Crew	Typically 8 trips each week day on 2 miles of paved road and 0.50 miles unpaved roads.	Calculate emission based on 3 shifts, 4 trips per shift on 0.50 miles of unpaved road and 2 miles of paved roads.

Waste Placement:

Republic worked with DAQEM in early 2006 to establish an emission factor for waste placement. In June of 2005, DAQEM issued a permit to Nevada Construction Clean-Up, Inc. which included waste placement as emission unit: A01 (Please see noted Permit #15283 for reference). The emission factor used was 0.00016 lbs/ton and as referenced, the emission factor for scrap and waste materials handling are not available; therefore, a conservative estimate for PM_{10} emission is based on the emission factors derived from crushed stone processing. The emission factor is based from EPA AP-42, Section 11.19.2 and Table 11.19.2-2. The emission factor in the EPA section referenced in the footnote is 0.000016 lb/ton of material. Republic is using in the permit as an emission factor was 10 times higher.

Table 8: Waste Placement

EU	Description	Throughput		EF	CF	PTE	
		tons/hr	tons/yr			lbs/hr	tons/yr
W08	Waste Placement	3,000	13,008,600	0.00016	N/A	0.48	1.04

Stockpiles Fugitive Emissions Calculations:

Republic used AP-42 13.2.4 referenced C. Cowherd, Jr., et al., *Control of Open Fugitive Dust Sources*, EPA-450/3-88-008 and Western Regional Air Partnership's (WRAP) Fugitive Dust Handbook, to derive the emission factors for fugitive emission from storage piles.

Table 9: Stockpiles

EU	Description	Throughput	EF (lbs/ tons)	CF	PTE	
					lbs/hour	tons/year
W09	Stockpiles - Active	77.03 acres	0.01 lb/acre-hour		0.77	3.37
	Stockpiles - Inactive	46.08 acres	0.001 lb/acre-hour		0.05	0.20
PM_{10} Subtotals for Stockpiles					**0.82**	**3.58**

Note: Emission Factor[1] = 1.7(s/1.5)(365-p/235)(f/15)(ratio of PM_{10} to PM) where,

S^2 = silt content % = 9% for active storage piles and 1.8% for inactive storage piles (assumes inactive stockpiles are stabilized to 80% control).

P^3 = number of days with >0.01 inches of precipitation per year = 30 days
F^4 = percentage of time that wind speed exceeds 5.4 m/s at mean pile height = 25%
Ration of PM_{10} to PM = 0.50
Emission Factor[5] = 0.12 PM_{10} per day per acre, Emission Factor = 0.01 lb PM_{10} per hour per acre (based on 24 hours/day)

[1]Emission Factor Calculation reference: *Control of Open Fugitive Dust Sources*, Section 4.1.3, EPA-450/3-98-008.
[2]Silt content obtained from AP-42 Table 13.2.4-1 for the average silt content for Municipal Solid Waste Landfill Cover).
[3]Number of days with >0.01 inches of precipitation per year obtained from AP-42 Figure 13.2.2-1.
[4]Based on Reid Gardner, Moapa Windrose.
[5]PM_{10} to PM ratio of 0.5 is based on AP-42 14.2.5.

Example Calculation: PM_{10} Emissions, lb/hour = Emission Factor, lb PM_{10} per day per acre X Maximum Area of Stockpile, acres.

Diesel Engines:

Diesel Engines (EUs: W200, W201, W203 through W209) were updated from fuel limitations to operating hours. The emissions for each emission unit did not change by doing this update.

Table 10: Aggregate Plant PTE (tons per year)

EU	PM_{10}	EU	PM_{10}	EU	PM_{10}
A01	0.32	A46	0.03	A106	0.12
A02	0.03	A47	0.07	A108	0.01
A04	0.04	A49	0.09	A109	0.01
A07	0.18	A51	0.05	A112	0.01
A08	0.02	A52	0.09	A113	0.01
A09	0.04	A58	0.02	A114	0.01
A12	0.46	A60	0.05	A116	0.01
A16	0.16	A62	0.02	A118	0.01
A17	1.13	A65	0.59	A119	0.01
A22	0.16	A69	0.03	A122	0.01
A23	0.02	A72	0.01	A124	0.01
A25	0.37	A74	0.07	A125	0.01
A27	0.01	A77	0.02	A126	0.01
A28	0.01	A79	0.02	A128	0.02
A30	0.01	A82	0.74	A130	0.01
A31	0.01	A83	0.74	A133	0.19
A33	0.01	A85	0.03	A136	1.11
A34	0.01	A87	0.01	A138	0.14
A35	0.14	A89	0.14	A141	0.05
A37	1.22	A93	0.03	A143	0.05
A38	1.22	A95	0.05	A145	0.02
A40	0.21	A98	0.15	A147	0.02
A42	0.07	A102	0.03	A149	0.01
A44	0.10	A104a	0.01	A151	0.01

Table 11: Blasting PTE (tons per year)

EU	PM_{10}	NO_x	CO
A127	8.31	5.50	29.11

Table 12: Aggregate Plant Emission Rates and Concentrations

EU	PM_{10} Mass Emission Rate (pounds per hour)	PM Stack Emission Concentrations	
		(g/dscm)	(gr/dscf)
A04	0.01	0.032	0.014
A09	0.01	0.032	0.014
A58	0.01	0.032	0.014
A62	0.01	0.032	0.014
A79	0.01	0.032	0.014
A104a	0.01	0.032	0.014
A130	0.01	0.032	0.014
A151	0.01	0.032	0.014

Table 13: MSWL PTE (tons per year)

EU	PM_{10}	$PM_{2.5}$	NO_x	CO	SO_x	VOC	HAP
H01	93.69	0.00	0.00	0.00	0.00	0.00	0.00
H02	121.85	0.00	0.00	0.00	0.00	0.00	0.00
W08	1.04	0.00	0.00	0.00	0.00	0.00	0.00
W09	3.58	0.00	0.00	0.00	0.00	0.00	0.00
W200	0.02	0.02	2.77	0.25	0.02	0.08	0.03
W201	1.38	1.38	37.54	20.90	1.11	3.54	1.53
W203	0.50	0.50	15.23	2.44	0.33	0.40	0.45
W204	0.29	0.29	9.93	1.67	0.22	0.26	0.30
W205	0.55	0.55	7.83	1.69	1.09	0.67	0.13
W206	0.20	0.20	5.47	0.45	0.14	0.14	0.20
W207	0.20	0.20	5.47	0.45	0.14	0.14	0.20
W208	0.01	0.01	0.07	0.02	0.01	0.01	0.01
W209	0.02	0.02	0.30	0.06	0.01	0.03	0.01
W210	0.26	0.26	6.35	0.79	1.55	0.35	0.17
W211	0.26	0.26	6.35	0.79	1.55	0.35	0.17
W212	0.21	0.21	4.33	0.83	1.03	0.33	0.02
W213	0.24	0.24	4.31	4.14	1.03	0.32	0.02

Table 11: MSWL Emission Rates (pounds per hour)

EU	PM_{10}	$PM_{2.5}$	NO_x	CO	SO_x	VOC	HAP
H01	21.35						
H02	28.01						
W08	0.48						
W09	0.82						
W200	0.43	0.43	55.33	4.98	0.45	1.50	0.01
W201	0.86	0.86	23.46	13.06	0.69	2.21	0.01
W203	0.40	0.40	12.18	1.95	0.26	0.32	0.01
W204	0.41	0.41	14.19	2.38	0.31	0.37	0.01
W205	0.13	0.13	1.79	0.39	0.02	0.15	0.03
W206	0.10	0.10	2.79	0.23	0.07	0.09	0.13
W207	0.10	0.10	2.79	0.23	0.07	0.09	0.13
W208	0.10	0.10	1.49	0.32	0.02	0.13	0.02
W209	0.57	0.57	8.04	1.73	0.10	0.69	0.13
W210	0.06	0.06	1.45	0.18	0.35	0.08	0.04
W211	0.06	0.06	1.45	0.18	0.35	0.08	0.04

EU	PM_{10}	$PM_{2.5}$	NO_x	CO	SO_x	VOC	HAP
W212	0.05	0.05	0.99	0.19	0.24	0.08	0.01
W213	0.06	0.06	0.98	0.95	0.24	0.07	0.01

Production Limits

Aggregate Plant

a. The Permittee shall limit the amount of material processed at the aggregate plant to the production rates listed in Table 12 in any consecutive 12-month period.

Table 12: Maximum Allowable Production Throughputs

EU	Description	Plant	tons/year
A01	Mining/ Excavation	Primary Plant	7,000,000
A25	Gabion Screen	Gabion Plant	1,000,000
A37	Triple Deck Screen SC2	Secondary Plant	3,300,000
A38	Triple Deck Screen SC3	Secondary Plant	3,300,000
A62	VSI Crusher	Sand Plant	1,600,000
A79	Cone Crusher 1	Cone Plant	2,000,000
A108	Triple Deck Screen SC7	Wash Plant	3,500,000
A109	Triple Deck Screen SC8	Wash Plant	3,500,000
A130	Primary Crusher 2	Landfill Cover Plant	1,000,000
A136	Screen SC9	Landfill Cover Plant	3,000,000

b. The Permittee shall limit the total amount of surface area blasted to 1,733,886 ft^2 in any consecutive 12-month period.

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c. The Permittee shall limit the total vehicles miles traveled (VMT) on paved roads to not more than 1,237,592 miles traveled in any consecutive 12-month permit (EU: H01).
d. The Permittee shall limit the total vehicles miles traveled (VMT) on unpaved roads to not more than 321,920 miles traveled in any consecutive 12-month permit (EU: H02).
e. The Permittee shall not exceed the maximum amount of throughput for the Waste Placement of 13,008,600 tons in any consecutive 12-month period (EU: W08).
f. The Permittee shall limit the total area of stockpiles to not more than 77.03 acres of active stockpiles and 46.08 acres of inactive stockpiles (EU: W09).
g. The Permittee shall limit the operation of the generator (EU: W200) to a total of 100 hours in any consecutive 12-month period.
h. The Permittee shall limit the operation of the generator (EU: W201) to a total of 3,200 hours in any consecutive 12-month period.
i. The Permittee shall limit the operation of the generator (EU: W203) to a total of 2,500 hours in any consecutive 12-month period.
j. The Permittee shall limit the operation of the generator (EU: W204) to a total of 1,400 hours in any consecutive 12-month period.
k. The Permittee shall limit the operation of the Tipper Engine (EU: W205) to a total of 4,380 hours in any consecutive 12-month period.
l. The Permittee shall limit the operation of each well generator (EUs: W206 and W207) to a total of 4,387 hours per generator in any consecutive 12-month period.
m. The Permittee shall limit the operation of the generator (EU: W208) to a total of 100 hours in any consecutive 12-month period.

n. The Permittee shall limit the operation of the generator (EU: W209) to a total of 75 hours in any consecutive 12-month period.

Review of Applicable Regulations

When calculating the NEI and source PTE for Modification 5, the PTE for the Aggregate Plant and the paved and unpaved haul roads from Modification 9 was employed given that Modification 9 was issued with a five year review of the source's actions. The diesel engines (EUs: W200, W201, and W203 through W209) were only updated to reflect hours instead of fuel usage and therefore, there was no change to the NEI. There was an overall NEI decreased for the Aggregate Plant and for the haul roads for PM_{10} emissions.

Table 13: NEI for the Aggregate Plant for Modification 5

	PM_{10}	NO_x	CO
Total Emissions for the Aggregate Plant for Modification 9	20.60	0.00	0.00
Total Emissions for the Aggregate Plant Modification 5	19.22	5.50	29.11
NEI Total for Aggregate Plant	**-1.38**	**5.50**	**29.11**

Table 14: NEI for Haul Roads for Modification 5

	PM_{10}
Total Emissions for Paved and Unpaved Haul Roads for Modification 9	216.71
Total Emissions for Paved and Unpaved Haul Roads Emissions for Modification 5	215.53
NEI for Paved and Unpaved Haul Roads	**-1.18**

Table 15: Modification 5 Source-wide NEI

Description	PM_{10}	$PM_{2.5}$	NO_x	CO	SO_x	VOC	HAP	H_2S
Aggregate Plant	-1.38	0.00	5.50	29.11	0.00	0.00	0.00	0.00
Haul Roads (H01 & H02)	-1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Waste Placement (W08)	1.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stockpiles: Active/Inactive (W09)	3.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diesel Engines (W200, W201, & W203-W212)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
John Deere Diesel Tipper Engine (W213)	0.24	0.24	4.31	4.14	1.03	0.32	0.02	0.00
NEI for Modification 5	**2.30**	**0.24**	**9.81**	**33.25**	**1.03**	**0.32**	**0.02**	**0.00**
Total PTE of Source	**264.56**	**18.77**	**128.86**	**131.93**	**196.61**	**18.31**	**10.75**	**0.05**

Table 16: 2006 Fugitive Emissions Estimates for Landfill Gas

2006 Fugitive Emissions Limits from Landfill Gas		
Pollutants	**Maximum Emission based on 2006 Estimates**	
	lb/hour	**ton/year**
VOC (Including HAP, but not H_2S)	7.51	32.89
HAP (Not Including H_2S)	7.34	32.16
TCS (H_2S)	33.62	147.27

Table 17: Summary of Requirements in AQR Sections 12

	PM_{10}	$PM_{2.5}$	NO_x	CO	SO_x	VOC	HAP	H_2S
Non-fugitive PTE (tpy)	264.56	18.77	128.86	131.93	196.61	18.31	10.75	0.05
Landfill Fugitive (tpy)	0.00	0.00	0.00	0.00	0.00	32.89	32.16	147.27
NEI From AQR Sections 12 (tpy)	2.30	0.24	9.81	33.25	1.03	0.32	0.02	0.00
Minor Source	< 100 tpy	< 100 tpy	< 100 tpy	< 100 tpy	≤ 100 tpy	< 100 tpy	If single HAP ≤ 10 tpy and all HAP ≤ 25 tpy	< 1.0 tpy
Control Technology	RACT	RACT	RACT	RACT	RACT	RACT	RACT	RACT
Notice of Proposed Action	If NEI ≥ 15 tpy	If NEI ≥ 15 tpy	If NEI ≥ 40 tpy	If NEI ≥ 50 tpy	If NEI ≥ 40 tpy	If NEI ≥ 40 tpy	If NEI ≥ 10 tpy for all HAP	If NEI ≥ 10 tpy
Area Classification	PSD	PSD	Non-attain-ment for Ozone	PSD	PSD	Non-attain-ment for Ozone	PSD	PSD
Preconstruction Ambient Air Monitoring	10 µg/m^3 24-hour[1]	No	14 µg/m^3 annual[1]	575 µg/m^3 8-hour[1]	13 µg/m^3 24-hour[1]	If NEI ≥ 100 tpy for O_3	No	0.2 µg/m^3 1-hour[1]

Note: Apply PTE threshold to new sources, NEI threshold to modifying sources.
[1]PSD Monitoring Significance Levels for Pre-Construction is based on Averaging Time.

1. The proposed modification does not trigger a major modification for any regulated pollutant base on the NEI indicated above. The proposed action does not trigger minor NSR significance thresholds for any pollutant; therefore, a RACT analysis was not required.

Applicable Regulations:

The aggregate plant, haul roads, waste placement, cover stockpiles (active/inactive) and the tipper engine are at Republic are applicable to AQRs 0, 4, 5, 6, 8, 11, 12, 13, 14, 18, 25, 26, 40, 41, 43, and 80.

Republic is subject to 40 CFR 60 Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants for the aggregate plant. The John Deere diesel tipper engine is subject to 40 CFR 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. Republic is subject to 40 CFR 60 Subpart WWW – Standards of Performance for Municipal Solid Waste Landfills. The source commenced construction of a MSWL on or after May 30, 1991. The source is also subject o 40 CFR 63 Subpart AAAA – National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills because the source is subject to 40 CFR 60 Subpart WWW. Republic is subject to 40 CFR 63 Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines for all generators and tipper engines manufactured prior to April 2006 and to 40 CFR 63 Subpart CCCCCC – National Emission

Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities for the 2,500 gallon aboveground gasoline tank.

Control Technology

Aggregate Plant and Blasting (EUs: A01 through A151):

PM_{10} emissions from the aggregate plant not otherwise controlled by baghouse or part of the wet process are controlled using wet suppression. The aggregate plant crushers are all controlled by baghouses. Moisture was not considered in the emission calculations for crushers as controls analyses in previous permitting actions for these emission units concluded baghouses as BACT.
PM_{10} emissions control methods for blasting identified were from the Best Management Practices for construction. Potential control technologies for PM_{10} emissions from blasting include the following, ranked in order of potential effectiveness:

1. Maintain surface rock and vegetation where possible
2. Limit the blast footprint area to no larger than what can be stabilized immediately following the blast.
3. Presoak surface soils to depth of the caliche or bedrock.
4. Water disturbed soils to form a crust immediately following the blast.

Republic elects to implement all of the control technologies, thus further review of technological feasibility, economic, environmental, and energy impacts is unnecessary. PM_{10} emissions from blasting are accounted for in emission unit A127.

CO and NO_x emissions from using ANFO used for the blasting material were researched and no controls were identified for these emissions.

Haul Roads (EUs: H01 and H02):

The haul roads have not changed other then the unpaved haul roads were consolidated under one emission unit. The paved and unpaved haul roads will continued to be maintained per previous BACT determinations.

Waste Placement (EU: W08):

Fugitive PM_{10} emissions may be emitted when waste is place in the working face of the landfill. Small particulate may be emitted from the movement of the material. The potential control technologies for waste placement are adding water, dumping materials from the lowest height practicable, and dumping materials slowly.

1. Adding Water: Landfills are prohibited from adding uncombined liquids into the waste as they are being placed in the landfill. In accordance with 40 CFR 258.28 (commonly referred to as Subtitle D), Republic cannot add water to the waste. Therefore, adding water to the material before placement or at the time of placement is not technologically feasible and will not be considered further in the analysis.
2. Dumping materials from the lowest height practicable: PM10 emissions can be minimized through the placement of waste by a mechanical tipper. The tipper lifts the

trailer with the waste and dumps the material from the lowest point of the tipper onto the ground. This is the lowest height practicable and is technologically feasible.

3. Dumping materials slowly: as previously described, materials are placed using a mechanical tipper. The rate of the rise of the tipper is controlled so the rate of the materials being placed is also controlled. Republic considers this to be technologically feasible control technology.

Republic elects to implement all of the remaining technically feasible control technologies, thus further review of economic, environmental, and energy impacts is unnecessary. Based on the above analysis, Republic proposed the control for PM_{10} emission from waste placement to be placing waste as placing waste slowly from the lowest height practicable.

Stockpiles (active/inactive) used for Landfill Cover Material (EU: W09):

Fugitive PM_{10} emissions may be emitted when materials are removed from the active stockpile of from wind erosion of active and inactive stockpiles. After review of the EPA RBLC database, industry standards, and AQR Section 94, the control methods identified were ranked in order of potential effectiveness.

1. Maintain dust palliative on surface soils.
2. Maintain at least 70% optimum moisture content.
3. Remove material from the downwind side of the stockpile when safe to do so.
4. Water stockpile to form a crust at the completion of activity (inactive).
5. Apply and maintain a dust palliative to all outer surfaces of the stockpile (inactive).

Republic elects to implement all of the control technologies, thus further review of technological feasibility, economic, environmental, and energy impacts is unnecessary. Based on the above analysis, Republic proposes the control for PM_{10} emission from the active/inactive stockpiles to be watering to maintain at least a 70% moisture content in the active stockpile, removing of materials from the downwind side of the stockpile when safe to do so, watering inactive stockpile to form a crust upon completion of activity, and applying and maintaining a dust palliative cover of the outer surfaces of the inactive stockpiles. Additionally, the stockpiles over 8 feet in height will have a road bladed to the top to allow water truck access.

Tipper Engine (EU: W213):

The John Deere tipper engine will be equipped with injection timing retardation and will be turbocharged and aftercooled. The engine shall be operated and maintained in accordance with the manufacturer's specifications and shall combust only low sulfur (<0.05%) diesel fuel. Additional add-on controls are not cost effective.

Monitoring

Aggregate Plant

1. This source is required to comply with the monitoring requirements in 40 CFR 60, Subpart OOO.
2. The Permittee shall perform at least one visual emissions observation on each emission unit in the aggregate plant each day. Daily visual observations shall include the aggregate plant which includes control device stacks (EUs: A01, A02, A04, A07, A08, A09, A12, A16,

A17, A22, A23, A25, A27, A28, A30, A31, A33, A34, A35, A37, A38, A40, A42, A44, A46, A47, A49, A51, A52, A58, A60, A62, A65, A69, A72, A74, A77, A79, A82, A83, A85, A87, A89, A93, A95, A98, A102, A104a, A106, A127, A128, A130, A133, A136, A138, A141, A143, A145, A147, A149 and A151) while operating, to demonstrate compliance with the opacity limits. If visible emissions that appear to exceed the opacity limit(s) are observed, the opacity of emissions shall be visually determined in accordance with 40 CFR 60 Appendix A: Reference Method 9. Corrective actions shall be taken to minimize any emissions as soon as practicable.

3. The Permittee shall inspect the water spray system daily and investigate and correct any problems before resuming operations.
4. The Permittee shall conduct daily monitoring of the pressure drop across each baghouse cell with the installation and operation of a pressure differential (Magnahelic) gauge per manufacturer's specifications.
5. The Permittee shall visually inspect the baghouse interior at least monthly for air leaks. Defective baghouse compartments shall be sealed off and repairs completed within 5 working days of the discovery of the malfunction. Should the malfunction cause the baghouse to be ineffective in controlling particulate emissions, the processing of material shall cease until such repairs to the baghouse are completed.
6. A preventative maintenance schedule that is consistent with the baghouse manufacturer's instructions for routine and long-term maintenance shall be developed and followed.
7. The Permittee shall have a standard operating procedures (SOP) manual for baghouses. The procedures specified in the manual for maintenance shall, at a minimum, include a preventative maintenance schedule that is consistent with the baghouse manufacturer's instructions for routine and long-term maintenance.

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8. The Permittee shall perform at least one visual emissions observation on the source-wide level each daily. Daily visual observations shall include the haul roads, waste placement, stockpiles and the John Deere tipper engine (EUs: H01, H02, W08, W09, and W213) while operating to demonstrate compliance with the opacity limit. If visible emissions that appear to exceed the opacity limit(s) are observed, then corrective actions shall be taken to minimize the emissions and, if practicable, the opacity of emissions shall be visually determined in accordance with 40 CFR 60 Appendix A: Reference Method 9. *[AQR 26.1]*
9. The Permittee shall ensure compliance with the provisions of 40 CFR 60, Subpart IIII contained within this document by demonstrating all of the following: *[40 CFR 60.424211(b)]*
    a. Operation of the diesel engines (EUs: W210, W211 and W212) according to the manufacturer's written instructions or procedures developed by the Permittee that are approved by the engine manufacturer; and
    b. the keeping of records of engine manufacturer data indicating compliance with the emission standards.
10. The Permittee shall demonstrate compliance with the provisions of 40 CFR 60 Subpart IIII contained within this document through the following (EU: W213):

a. operation of the diesel engine according to the manufacturer's written instruction or procedures developed by the Permittee that are approved by the engine manufacturer, and
b. keeping of records of engine manufacturer data indicating compliance with the emission standards.

Testing

Aggregate Plant

1. Compliance with the opacity standards of this permit shall be demonstrated, in part, through performance testing in accordance with 40 CFR 60 Reference Method 9 (Standards for Opacity).
2. The Permittee shall conduct performance testing on all emission units in the aggregate plant except mining and blasting (EUs: A02, A04, A07, A08, A09, A12, A16, A17, A22, A23, A25, A27, A28, A30, A31, A33, A34, A35, A37, A38, A40, A42, A44, A46, A47, A49, A51, A52, A58, A60, A62, A65, A69, A72, A74, A77, A79, A82, A83, A85, A87, A89, A93, A95, A98, A102, A104a, A106, A128, A130, A133, A136, A138, A141, A143, A145, A147, A149 and A151) according to the following conditions:
   a. The Permittee is required to comply with the performance testing requirements of 40 CFR 60, Subpart OOO.
   b. Subsequent performance testing shall be conducted every five years.
3. Compliance with the emission standards in 40 CFR 60, Subpart OOO shall be demonstrated through performance testing in accordance with 40 CFR 60 Reference Method 5 or 17.
4. The Permittee shall conduct performance testing on the baghouse stack exhaust points (EUs: A04, A09, A58, A62, A79, A104a, A130 and A151) according to the following conditions:
   a. The Permittee is required to comply with the performance testing requirements of 40 CFR 60, Subpart OOO.
   b. Subsequent performance testing shall be conducted every five years.
5. Subsequent performance testing shall be conducted on or before the anniversary date of the initial performance test at the appropriate frequency listed in Table IV-D-1.

Table 18: Performance Test Frequency

Emission Units	Description	Test Method	Pollutant	Frequency
A02, A04, A07, A08, A09, A12, A16, A17, A22, A23, A25, A27, A28, A30, A31, A33, A34, A35, A37, A38, A40, A42, A44, A46, A47, A49, A51, A52, A58, A60, A62, A65, A69, A72, A74, A77, A79, A82, A83, A85, A87, A89, A93, A95, A98, A102, A104a, A106, A128, A130, A133, A136, A138, A141, A143, A145, A147, A149 and A151	Aggregate Plant	EPA Method 9	Opacity	Initially and every 5 years
A04, A09, A58, A62, A79, A104a, A130 and A151	Process A Crushers	EPA Method 5 or Method 17	PM	Initially and every 5 years

6. In addition, performance testing is required when any emission unit increases its hourly production rate beyond the rate permitted or when the actual flow rate exceeds by 20 percent at which the performance test was conducted, when any equipment addition or modification increases the PTE or when an emission unit is added. A modification to the permit is also required prior to commencement of such operation.

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7. As of May 3, 2013, the Permittee shall performance test the IC engines per the requirements in 40 CFR 63.6610 and 63.6620 (EUs: W200, W201, W203 and W204). *[40 CFR 63.6610 and 63.6620]*

8. As of May 3, 2013, the Permittee shall performance test the IC engines per the requirements in 40 CFR 63.6612 (EUs: W205 through W209 inclusive). *[40 CFR 63.6612]*

9. As of May 3, 2013, the Permittee shall perform subsequent testing every 8,760 hours or every three years, whichever comes first (EUs: W200, W201, W203 and W204). *[40 CFR 63.6615]*

10. As of May 3, 2013, if the Permittee elects to reduce the CO emission of IC engines by 70 percent of the permitted emission limit according to the emissions limitations specified in Section III-B-3, the Permittee shall follow the methods for calculating the percent reduction according to the procedures detailed in 40 CFR 63.6620(e)(1) (EUs: W200, W201, W203 and W204). *[40 CFR 63.6620]*

11. As of May 3, 2013, the Permittee shall select to comply with the emission limitation to reduce CO as specified 40 CFR 63 Subpart ZZZZ, and does not use an oxidative catalyst the Permittee shall petition the Control Officer for operating limitations to be established during the initial performance test and continuously monitored thereafter; or for approval of no operating limitations. The Permittee shall not conduct the initial

performance test until after the petition has been approved by the Control Officer. *[40 CFR 63.6620(f)]*

12. As of May 3, 2013, the Permittee shall submit a Notification of Intent to conduct a performance test to the Control Officer, DAQEM Compliance Division at least 60 days before the performance test is scheduled to begin as required in 40 CFR 63.7(b)(1) (EUs: W200, W201, W203, W204 through W209 inclusive). *[40 CFR 63.6645(f)]*
13. As of May 3, 2013, the Permittee shall conduct initial performance tests in Table III-D-3 within 180 days after the compliance date that is specified for your stationary RICE in 40 CFR 63.6595 and according to the provisions in 40 CFR 63.7(a)(2) (EUs: W200, W201, W203, W204 through W209 inclusive). *[40 CFR 63.6610(a) and 63.6612]*

Table 19: Performance Test Methods for EU: W200, 201, 203, and 204 through W209

Reference	EPA Test Method
40 CFR Part 60 Appendix A	Method 10, or ASTM Method D6522-00
40 CFR Part 63 Appendix A	Method 320, or ASTM D6348-03

Mitigation

1. The source has no federal offset requirements.

Increment

Republic Dumpco is a major source in the Hydrographic Area 216 (Garnet Valley) that has applied for a minor modification. Permitted emission units include municipal solid waste landfill operations. Since minor source baseline dates for PM_{10} (December 31, 1980), NO_2 (January 24, 1991) and SO_2 (December 31, 1980) have been triggered, Prevention of Significant Deterioration (PSD) increment analysis is required.

DAQEM modeled the source using AERMOD to track the increment consumption. Stack data submitted by the applicant were used in the model. Five years (1999 to 2003) of meteorological data from the McCarran station and Desert Rock station were used in the model. United States Geological Survey (USGS) National Elevation Dataset (NED) was used to calculate elevations. Table 20 presents the results of the modeling.

Table 20: PSD Increment Consumption

Pollutant	Averaging Period	PSD Increment Consumption by the Source ($\mu g/m^3$)	Location of Maximum Impact	
			UTM X (m)	UTM Y (m)
SO_2	3-hour	23.86[1]	691820	4027161
SO_2	24-hour	5.81[1]	691512	4028059
SO_2	Annual	1.11	691485	4028356
PM_{10}	24-hour	25.14[1]	691616	4027961
PM_{10}	Annual	5.81	691536	4027155
NO_X	Annual	1.88	691467	4028555

[1]Modeled High 2nd High Concentration

Table 20 shows the location of the maximum impact and the potential PSD increment consumed by the source at that location. The impacts are below the PSD increment limits.

Public Notice

1. The modifications, and associated revisions, proposed in this permitting action do not constitute a public participation process per AQR Section 12.4. However, a public notice will be published in a newspaper of general circulation within Clark County, Nevada, per the expectations of the applicant.

Permitting History

1. The last permit was issued on December 21, 2010.
2. Application for Modification 5 was received by DAQEM on October 24, 2007.
3. The application was assigned to the Air Quality Specialist on April 1, 2010.
4. The application was deemed incomplete on May 10, 2010, June 11, 2010, and September 16, 2010.
5. Supplemental information was submitted to DAQEM on March 3, 2007, October 24, 2007, September 30, 2008, October 29, 2008, December 18, 2008, January 23, 2010, February 27, 2009, July 10, 2009, June 14, 2010, and June 29, 2010.
6. The application was deemed complete on November 23, 2010.
7. The TSD and draft permit were submitted for review on November 23, 2010.

Attachments

Primary Plant

EU	Rating (tph)	Description	Make	Model	Serial	SCC	Throughput		PM_{10} EF (lbs/ton)	CF	Method	PTE	
							tons/hr	tons/yr				lbs/hr	tons/yr
A01	4,825	Mining/Excavation[1]				30502033	4,825.0	7,000,000	0.000092	1	Wet Suppression	0.44	0.32
A02	1,650	Grizzly 1[2]				30502013	1,650.0	4,000,000	0.000016	1	Wet Suppression	0.03	0.03
A04	600	Grizzly to Primary Crusher 1 Primary Crusher 1 Primary Crusher 1 to Belt 1	Crush Boss	HSI 400	6356511	30502001	600.0	3,000,000	0.002400	0.01	Baghouse	0.01	0.04
A07	1,650	2 Belt System (Drop from Grizzly and Belt 1 to Belt 2)				30502006	1,650.0	4,000,000	0.000092	1	Wet Suppression	0.15	0.18
A08	600	Grizzly 2				30502013	600.0	3,000,000	0.000016	1	Wet Suppression	0.01	0.02
A09	600	Grizzly 2 to Primary Crusher 2 Primary Crusher 2 Primary Crusher 2 to Belt 3	Crush Boss	HSI 400	6356536	30502001	600.0	3,000,000	0.002400	0.01	Baghouse	0.01	0.04
A12	1,650	3 Belt System (Grizzly to Belt 2, Belt 3 to Belt 4 and Belt 4 to Belt 5)				30502006	1,650.0	4,000,000	0.000138	1	Wet Suppression	0.23	0.28
	2,500	2 Belt Transfers (Belt 2 to Belt 5 and Belt 5 to Stacker S1)				30502006	2,500.0	4,000,000	0.000092	1	Wet Suppression	0.23	0.18
A16	2,500	Stacker S1				30502006	2,500.0	7,000,000	0.000046	1	Wet Suppression	0.12	0.16
A17	2,500	7 Belt System (Belt Feeders 6, 7 and 8 to Belt 9, Belt 9 to Belt 10, Belt 10 to Belt 11, Belt 11 to Belt 12 and Belt 12 to Stacker S2)				30502006	2,500.0	7,000,000	0.000322	1	Wet Suppression	0.81	1.13
A22	2,500	Stacker S2				30502006	2,500.0	7,000,000	0.000046	1	Wet Suppression	0.12	0.16
Primary Plant PM_{10} Subtotal												**2.16**	**2.54**

1) Mining EF based on 2 conveyor drop points (controlled).

2) Grizzly EF based on Truck Unloading EF in Table 11.19.2-2.

Gabion Plant

EU	Rating (tph)	Description	Make	Model	Serial	SCC	Throughput		PM_{10} EF[1] (lbs/ton)	CF[2]	Method	PTE	
							tons/hr	tons/yr				lbs/hr	tons/yr
A23	415	Belt 12 to Belt 13 (From Primary Plant)				30502006	415.0	1,000,000	0.000046	1	Wet Suppression	0.02	0.02
A25	415	Belt 13 to Gabion Screen SC1	Telsmith	6x16 TD	275M101C11607	30502002	415.0	1,000,000	0.00074	1	Wet Suppression	0.31	0.37
		Gabion Screen SC1											
		Gabion Screen SC1 to Belt 14											
		Gabion Screen SC1 to Belt 15											
		Gabion Screen SC1 to Belt 16											
A27	210	Belt 14				30502006	210.0	600,000	0.000046	1	Wet Suppression	0.01	0.01
A28	210	Stacker S3				30502006	210.0	600,000	0.000046	1	Wet Suppression	0.01	0.01
A30	105	Belt 15				30502006	105.0	300,000	0.000046	1	Wet Suppression	0.01	0.01
A31	105	Stacker S4				30502006	105.0	300,000	0.000046	1	Wet Suppression	0.01	0.01
A33	105	Belt 16				30502006	105.0	300,000	0.000046	1	Wet Suppression	0.01	0.01
A34	105	Stacker S5				30502006	105.0	300,000	0.000046	1	Wet Suppression	0.01	0.01
Gabion Plant PM_{10} Subtotal												**0.39**	**0.45**

Secondary Plant

EU	Rating (tph)	Description	Make	Model	Serial	SCC	Throughput		PM_{10} EF[1] (lbs/ton)	CF[2]	Method	PTE	
							tons/hr	tons/yr				lbs/hr	tons/yr
A35	1,525	Belt Feeder 17 to Belt 18				30502006	1525.0	6,000,000	0.000046	1	Wet Suppression	0.07	0.14
A37	900	Belt 18 to Triple Deck Screens SC2 and SC3	JCI	6x20 TD	SAD1554A	30502002	900.0	3,300,000	0.000740	1	Wet Suppression	0.67	1.22
		Triple Deck Screen SC2											
		Screen SC2 to Belt 19											
		Screen SC2 to Belt 21											
		Screen SC2 to Belt 26											
		Screen SC2 to Belt 31											
A38	900	Triple Deck Screen SC3	JCI	6x20 TD	96H02B32	30502002	900.0	3,300,000	0.000740	1	Wet Suppression	0.67	1.22
		Screen SC3 to Belt 21											
		Screen SC3 to Belt 32											

A40	900	2 Belt System (Belt 19 to Belt 20 and Belt 20 to Stacker S6)				30502006	900.0	3,000,000	0.000092	1	Wet Suppression	0.08	0.14
	900	Belt 32 to Belt 20					900.0	3,000,000	0.000046	1	Wet Suppression	0.04	0.07
A42	900	Stacker S6				30502006	900.0	3,000,000	0.000046	1	Wet Suppression	0.04	0.07
A44	300	2 Belt System (Belt 21 to Belt 22 and Belt 22 to Stacker S7)				30502006	300.0	1,500,000	0.000092	1	Wet Suppression	0.03	0.07
		Additional Transfer from SC3 (via Belt 21) Included					300.0	1,500,000	0.000046			0.01	0.03
A46	300	Stacker S7				30502006	300.0	1,500,000	0.000046	1	Wet Suppression	0.01	0.03
A47	500	2 Belt Feeders to Belt 25				30502006	500.0	1,500,000	0.000092	1	Wet Suppression	0.05	0.07
A49	500	2 Belt System (Belt 26 to Belt 27 and Belt 27 to Stacker S8)				30502006	500.0	2,000,000	0.000092	1	Wet Suppression	0.05	0.09
A51	500	Stacker S8				30502006	500.0	2,000,000	0.000046	1	Wet Suppression	0.02	0.05
A52	500	2 Belt Feeders to Belt 30				30502006	500.0	2,000,000	0.000092	1	Wet Suppression	0.05	0.09
A58	600	Belt 31 to HSI 1 Crusher	Crush Boss	HSI 400	101400	30502002	600.0	2,000,000	0.002400	0.01	Baghouse	0.01	0.02
		HSI 1 Crusher											
		HSI 1 Crusher to Belt 33											
A60	600	Recirculation Belt 33				30502006	600.0	2,000,000	0.000046	1	Wet Suppression	0.03	0.05
Secondary Plant PM_{10} Subtotal												**1.83**	**3.36**

Sand Plant

EU	Rating (tph)	Description	Make	Model	Serial	SCC	Throughput		PM_{10} EF (lbs/ton)	CF	Method	PTE	
							tons/hr	tons/yr				lbs/hr	tons/yr
A62	200	Belt 25 to VSI Crusher 1	CEMCO	70	AVE0195170	30502003	200.0	1,600,000	0.002400	0.01	Baghouse	0.01	0.02
		Belt 35 to VSI Crusher 1											
		VSI Crusher 1											
		VSI Crusher 1 to Belt 34											
A65	300	Belt 34 to Screen SC4	JCI	6x20 TD	96H05D32	30502003	300.0	1,600,000	0.000740	1	Wet Suppression	0.22	0.59
		Screen SC4											
		Screen SC4 to Belt 35											
		Screen SC4 to Belt 39											

A69	210	3 Belt System (Belt 36 to Belt 37, Belt 37 to Belt 38 and Belt 38 to Stacker S9)				30502006	210.0	500,000	0.000138	1	Wet Suppression	0.03	0.03
A72	210	Stacker S9				30502006	210.0	500,000	0.000046	1	Wet Suppression	0.01	0.01
A74	200	3 Belt System (Belt 39 to Belt 40, Belt 40 to Belt 41 and Belt 41 to Stacker S10)				30502006	200.0	1,000,000	0.000138	1	Wet Suppression	0.03	0.07
A77	200	Stacker S10				30502006	200.0	1,000,000	0.000046	1	Wet Suppression	0.01	0.02
Sand Plant PM_{10} Subtotal												**0.31**	**0.74**

Cone Plant

EU	Rating (tph)	Description	Make	Model	Serial	SCC	Throughput		PM_{10} EF[1] (lbs/ton)	CF[2]	Method	PTE	
							tons/hr	tons/yr				lbs/hr	tons/yr
A79	300	Belt 30 to Cone Crusher 1 Cone Crusher 1 Cone Crusher 1 to Belt 42	Nordberg	HP 300	30310657	30502003	300.0	2,000,000	0.002400	0.01	Baghouse	0.01	0.02
A82	450	Belt 42 to Screens SC5 and SC6 Triple Deck Screen SC5 Screen SC5 to Belt 43 Screen SC5 to Belt 49 Screen SC5 to Belt 51	JCI	6x20 TD	99H03K32	30502003	450.0	2,000,000	0.000740	1	Wet Suppression	0.33	0.74
A83	450	Triple Deck Screen SC6 Screen SC6 to Belt 45	JCI	6x20 TD	43J0491	30502003	450.0	2,000,000	0.000740	1	Wet Suppression	0.33	0.74
A85	210	2 Belt System (Belt 43 to Belt 44 and Belt 44 to Stacker S11)				30502006	210.0	600,000	0.000092	1	Wet Suppression	0.02	0.03
A87	210	Stacker S11				30502006	210.0	600,000	0.000046	1	Wet Suppression	0.01	0.01
A89	300	4 Belt System (Belt 45 to Belt 46, Belt 46 to Belt 47, Belt 47 to Belt 48 and Belt 48 to Stacker S12)				30502006	300.0	1,500,000	0.000184	1	Wet Suppression	0.06	0.14
A93	300	Stacker S12				30502006	300.0	1,500,000	0.000046	1	Wet Suppression	0.01	0.03
A95	250	2 Belt System (Belt 49 to Belt 50 and Belt 50 to Belt 30)				30502006	250.0	1,000,000	0.000092	1	Wet Suppression	0.02	0.05

A98	450	4 Belt System (Belt 51 to Belt 52, Belt 52 to Belt 53, Belt 53 to Belt 54 and Belt 54 to Stacker S13)				30502006	450.0	1,500,000	0.000184	1	Wet Suppression	0.08	0.14
	150	Belt 53 to Belt 55					150.0	600,000	0.000046	1	Wet Suppression	0.01	0.01
A102	450	Stacker S13				30502006	450.0	1,500,000	0.000046	1	Wet Suppression	0.02	0.03
A104a	150	Belt 55 to VSI Crusher 2	CEMCO	80	ADEV0399180V	30502003	150.0	600,000	0.002400	0.01	Baghouse	0.01	0.01
		VSI Crusher 2											
		VSI Crusher 2 to Belt 39											
Cone Plant PM_{10} Subtotal												**0.91**	**1.95**

Wash Plant

EU	Rating (tph)	Description	Make	Model	Serial	SCC	Throughput		PM_{10} EF (lbs/ton)	CF	Method	PTE	
							tons/hr	tons/yr				lbs/hr	tons/yr
A106	1,200	Belt Feeder 56 to Belt 57				30502006	1200.0	5,000,000	0.000046	1	Wet Suppression	0.06	0.12
A108	605	Belt 57 to Screens SC7 and SC8	JCI	6x20 TD	96H01B32	30502003	605.0	3,500,000	0.000740	0.0001	Wet	0.01	0.01
		Triple Deck Screen SC7											
		Screen SC7 to Sand Screw 1											
		Screen SC7 to Belt 61											
A109	605	Triple Deck Screen SC8	Cedar Rapids	TSS 6203-32	54400	30502003	605.0	3,500,000	0.000740	0.0001	Wet	0.01	0.01
		Screen SC8 to Sand Screw 2											
		Screen SC8 to Belt 60											
		Screen SC8 to Belt 61											
A112	70	Sand Screw 1 to Belt 58				30502006	70.0	600,000	0.000046	0.0001	Wet	0.01	0.01
A113	70	Sand Screw 2 to Belt 58				30502006	70.0	600,000	0.000046	0.0001	Wet	0.01	0.01
A114	140	2 Belt System (Belt 58 to Belt 59 and Belt 59 to Stacker S14)				30502006	140.0	1,000,000	0.000092	0.0001	Wet	0.01	0.01
A116	140	Stacker S14				30502006	140.0	1,000,000	0.000046	0.0001	Wet	0.01	0.01
A118	550	Belt 60 to Stacker S15				30502006	550.0	4,500,000	0.000046	0.0001	Wet	0.01	0.01
A119	550	Stacker S15				30502006	550.0	4,500,000	0.000046	0.0001	Wet	0.01	0.01
A122	415	2 Belt System (Belt 61 to Belt 62 and Belt 62 to Storage Hopper)				30502006	415.0	1,000,000	0.000092	0.0001	Wet	0.01	0.01
A124	415	Storage Hopper to Belt 63				30502007	415.0	1,000,000	0.000046	0.0001	Wet	0.01	0.01
A125	415	Belt 63 to Rock Truck				30502006	415.0	1,000,000	0.000046	0.0001	Wet	0.01	0.01

A126	415	Rock Truck Dumping				30502031	415.0	1,000,000	0.000016	0.0001	Wet	0.01	0.01
Wash Plant PM_{10} Subtotal												**0.18**	**0.24**

Landfill Cover Plant

EU	Rating	Description	Make	Model	Serial	SCC	Throughput (A)		Pollutant	EF	PTE	
							ft^2/hr	ft^2/yr			lbs/hr	tons/yr
A127	NA	Blasting				30502009	24200.0	1,733,886	PM_{10}	EF=0.52[0.000014(A)$^{1.5}$]	27.41	8.31
							tons/hr	tons/yr		lbs/ton		
							32.5	1,418	NO_X	7.76	252.20	5.50
							32.5	1,418	CO	41.06	1334.45	29.11

EU	Rating (tph)	Description	Make	Model	Serial	SCC	Throughput		PM_{10} EF (lbs/ton)	CF	Method	PTE	
							tons/hr	tons/yr				lbs/hr	tons/yr
A128	1,800	Grizzly 3				30502013	1800.0	3,000,000	0.000016	1	Wet Suppression	0.03	0.02
A130	400	Grizzly 3 to Primary Crusher 2	Crush Boss	400	400504	30502001	400.0	1,000,000	0.002400	0.01	Baghouse	0.01	0.01
		Primary Crusher 2											
		Primary Crusher 2 to Belt 64											
A133	1,400	Grizzly 3 to Belt 64				30502006	1400.0	2,000,000	0.000046	1	Wet Suppression	0.06	0.05
	1,800	2 Belt System (Belt 64 to Belt 65 and Belt 65 to Belt 66)					1800.0	3,000,000	0.000092	1		0.17	0.14
A136	1,800	Belt 66 to Screen SC9	Cedar Rapids	8x20 TD	46531	30502003	1800.0	3,000,000	0.000740	1	Wet Suppression	1.33	1.11
		Belt 75 to Screen SC9											
		Screen SC9											
		Screen SC9 to Belt 67											
		Screen SC9 to Belt 70											
		Screen SC9 to Belt 72											
		Screen SC9 to Belt 74											
A138	1,000	3 Belt System (Belt 67 to Belt 68, Belt 68 to Belt 69 and Belt 69 to Stacker S16)				30502006	1000.0	2,000,000	0.000138	1	Wet Suppression	0.14	0.14
A141	1,000	Stacker S16				30502006	1000.0	2,000,000	0.000046	1	Wet Suppression	0.05	0.05
A143	500	2 Belt System (Belt 70 to Belt 71 and Belt 71 to Stacker S17)				30502006	500.0	1,000,000	0.000092	1	Wet Suppression	0.05	0.05

A145	500	Stacker S17				30502006	500.0	1,000,000	0.000046	1	Wet Suppression	0.02	0.02
A147	300	2 Belt System (Belt 72 to Belt 73 and Belt 73 to Stacker S18)				30502006	300.0	500,000	0.000092	1	Wet Suppression	0.03	0.02
A149	300	Stacker S18				30502006	300.0	500,000	0.000046	1	Wet Suppression	0.01	0.01
A151	200	Belt 74 to Cone Crusher 2 Cone Crusher 2 Cone Crusher 2 to Belt 75	Svedala	S-3000	03JA08802	30502002	200.0	500,000	0.002400	0.01	Baghouse	0.01	0.01
Landfill Cover Plant PM_{10} Subtotal												**29.32**	**9.94**

Tipper Engine (EU: W213)

EU# W213
Make: John Deere
Model: 4045HF275
S/N: **TBD**

Horsepower: 115
Hours/Day: 24.0
Hours/Year 8760

Manufacturer Guarantees

PM10	0.30	g/hp-hr
NOx	3.88	g/hp-hr
CO	5.00	g/hp-hr
SOx		g/hp-hr
VOC	0.30	1

Engine Type: Diesel 2

	Emission Factor (lb/hp-hr)	Control Efficiency	Potential Emissions lb/hr	Potential Emissions lb/day	Potential Emissions ton/yr
PM10	6.61E-04	0.00%	0.08	1.83	0.33
NOx	8.55E-03	0.00%	0.98	23.61	4.31
CO	1.10E-02	0.00%	1.27	30.42	5.55
SOx	2.05E-03	0.00%	0.24	5.66	1.03
VOC	6.61E-04	0.00%	0.08	1.83	0.33
HAP	4.52E-05	0.00%	0.01	0.12	0.02

EU	Description	SCC	Operating Conditions	Pollutant	PTE	
					lbs/hr	tons/yr
W200	Caterpillar Diesel Generator, M/N: 3516, Serial No. SSJ00130, 1,850 kW, 2,593 hp, DOM: 1994	20200102	24 hrs/day 100 hrs/yr	**PM_{10}**	0.43	0.02
				$PM_{2.5}$	0.43	0.02
				NO_X	55.33	2.77
				CO	4.98	0.25
				SO_X	0.45	0.02
				VOC	1.50	0.08
				HAP	0.01	0.03
W201	Caterpillar Diesel Generator, M/N: 3516, S/N: 7RN00440, 1,825 kW 2,593 hp, DOM: 1996	20200102	24 hrs/day 3,200 hrs/year	**PM_{10}**	0.86	1.38
				$PM_{2.5}$	0.86	1.38
				NO_X	23.46	37.54
				CO	13.06	20.90
				SO_X	0.69	1.11
				VOC	2.21	3.54
				HAP	0.01	1.53
W203	Caterpillar Diesel Generator, M/N: 3412CDITA, S/N, 2WJ01887, 750 kW, 1,072 bhp, DOM: 1998	20200102	24 hrs/day 2,500 hrs/year	**PM_{10}**	0.40	0.50
				$PM_{2.5}$	0.40	0.50
				NO_X	12.18	15.23
				CO	1.95	2.44
				SO_X	0.26	0.33
				VOC	0.32	0.40
				HAP	0.01	0.45
W204	Caterpillar Diesel Generator, M/N: 3412CDITA, S/N: 2WJ02059, 750 kW, 1,108 hp, DOM: 1998	20200102	24 hrs/day 1,400 hrs/year	**PM_{10}**	0.41	0.29
				$PM_{2.5}$	0.41	0.29
				NO_X	14.19	9.93
				CO	2.38	1.67
				SO_X	0.31	0.22
				VOC	0.37	0.26
				HAP	0.01	0.30
W205	Caterpillar Diesel Tipper Engine, M/N: 3208, S/N: 35601941, 150 hp, DOM: Pre-2006	20200102	24 hrs/day 4,380 hrs/yr	**PM_{10}**	0.13	0.55
				$PM_{2.5}$	0.13	0.55
				NO_X	1.79	7.83
				CO	0.39	1.69
				SO_X	0.02	1.09
				VOC	0.15	0.67
				HAP	0.03	0.13
W206	Cummins Diesel Generator, M/N: 6CT8.3-G2, S/N: F990933314, 188 bhp, DOM: Pre-2006 [Well #5]	20200102	24 hrs/day 4,387 hrs/yr	**PM_{10}**	0.10	0.20
				$PM_{2.5}$	0.10	0.20
				NO_X	2.79	5.47
				CO	0.23	0.45

EU	Description	SCC	Operating Conditions	Pollutant	PTE	
					lbs/hr	tons/yr
				SO_X	0.07	0.14
				VOC	0.09	0.14
				HAP	0.13	0.20
W207	Cummins Diesel Generator, M/N: 6CT8.3-G2, S/N: F990933315, 188 bhp, DOM: Pre-2006 [Well#7]	20200102	24 hrs/day 4,387 hrs/yr	**PM_{10}**	0.10	0.20
				$PM_{2.5}$	0.10	0.20
				NO_X	2.79	5.47
				CO	0.23	0.45
				SO_X	0.07	0.14
				VOC	0.09	0.14
				HAP	0.13	0.20
W208	Isuzu Diesel Generator, M/N: QD 145"6BD1", S/N: 3647886, 34 kW, 77 bhp, DOM: Pre-2006 [Well #6]	20200102	24 hrs/day 100 hrs/yr	**PM_{10}**	0.10	0.01
				$PM_{2.5}$	0.10	0.01
				NO_X	1.49	0.07
				CO	0.32	0.02
				SO_X	0.02	0.01
				VOC	0.13	0.01
				HAP	0.02	0.01
W209	Caterpillar Diesel Generator, M/N: 3406, S/N: 90U16559, 210 kW, 315 hp, DOM: Pre-2006 [Well #2]	20200102	24 hrs/day 75 hrs/yr	**PM_{10}**	0.57	0.02
				$PM_{2.5}$	0.57	0.02
				NO_X	8.04	0.30
				CO	1.73	0.06
				SO_X	0.10	0.01
				VOC	0.69	0.03
				HAP	0.13	0.01
W210	Caterpillar 3056E Diesel Engine, M/N: 3056E, S/N: 35603786, 129 kW, 173 bhp, DOM: 2007	20200102	8,760 hours/year	**PM_{10}**	0.06	0.26
				$PM_{2.5}$	0.06	0.26
				NO_X	1.45	6.35
				CO	0.18	0.79
				SO_X	0.35	1.55
				VOC	0.08	0.35
				HAP	0.04	0.17
W211	Caterpillar Diesel Engine, M/N: 3056E, S/N: 35603782, 129 kW, 173 bhp, DOM: 2007	20200102	8,760 hours/year	**PM_{10}**	0.06	0.26
				$PM_{2.5}$	0.06	0.26
				NO_X	1.45	6.35
				CO	0.18	0.79
				SO_X	0.35	1.55
				VOC	0.08	0.35
				HAP	0.04	0.17
W212	John Deere Tipper Engine,	20200102	8,760	**PM_{10}**	0.05	0.21

EU	Description	SCC	Operating Conditions	Pollutant	PTE	
					lbs/hr	tons/yr
	M/N: 4045H, S/N: PE4045H638663, , 115 hp, DOM: August 2007		hours/year	**$PM_{2.5}$**	0.05	0.21
				NO_X	0.99	4.33
				CO	0.19	0.83
				SO_X	0.24	1.03
				VOC	0.08	0.33
				HAP	0.01	0.02
W213	John Deere Diesel Tipper Engine, M/N: 4045HF275, S/N: TBD, 115 hp: DOM: 2006	20200102	8,760 hours/year	**PM_{10}**	0.08	0.24
				$PM_{2.5}$	0.08	0.24
				NO_X	0.98	4.31
				CO	1.27	4.41
				SO_X	0.24	1.03
				VOC	0.08	0.32
				HAP	0.01	0.02

PTE by Emission Units

EU	PM_{10}	$PM_{2.5}$	NOx	CO	SOx	VOC	HAP	H_2S
A01	0.32							
A02	0.03							
A04	0.04							
A07	0.18							
A08	0.02							
A09	0.04							
A12	0.46							
A16	0.16							
A17	1.13							
A22	0.16							
A23	0.02							
A25	0.37							
A27	0.01							
A28	0.01							
A30	0.01							
A31	0.01							
A33	0.01							
A34	0.01							
A35	0.14							
A37	1.22							
A38	1.22							
A40	0.21							
A42	0.07							
A44	0.10							
A46	0.03							
A47	0.07							

EU	PM_{10}	$PM_{2.5}$	NOx	CO	SOx	VOC	HAP	H_2S
A49	0.09							
A51	0.05							
A52	0.09							
A58	0.02							
A60	0.05							
A62	0.02							
A65	0.59							
A69	0.03							
A72	0.01							
A74	0.07							
A77	0.02							
A79	0.02							
A82	0.74							
A83	0.74							
A85	0.03							
A87	0.01							
A89	0.14							
A93	0.03							
A95	0.05							
A98	0.15							
A102	0.03							
A104a	0.01							
A106	0.12							
A108	0.01							
A109	0.01							
A112	0.01							
A113	0.01							
A114	0.01							
A116	0.01							
A118	0.01							
A119	0.01							
A122	0.01							
A124	0.01							
A125	0.01							
A126	0.01							
A127	8.31		5.50	29.11				
A128	0.02							
A130	0.01							
A133	0.19							
A136	1.11							
A138	0.14							
A141	0.05							
A143	0.05							
A145	0.02							
A147	0.02							
A149	0.01							

EU	PM_{10}	$PM_{2.5}$	NOx	CO	SOx	VOC	HAP	H_2S
A151	0.01							
H01	93.69							
H02	121.85							
W01	0.26							
W02						2.78		
W03	2.18							
W04						0.19		
W05	3.97							
W06						0.40	0.10	
W07	8.37	8.37	4.89	0.27	169.98	0.26	0.09	
W08	1.04							
W09	3.58							
W10	6.26	6.26	12.52	68.07	18.40	8.06	7.32	0.05
W200	0.02	0.02	2.77	0.25	0.02	0.08	0.03	
W201	1.38	1.38	37.54	20.90	1.11	3.54	1.53	
W203	0.50	0.50	15.23	2.44	0.33	0.40	0.45	
W204	0.29	0.29	9.93	1.67	0.22	0.26	0.30	
W205	0.55	0.55	7.83	1.69	1.09	0.67	0.13	
W206	0.20	0.20	5.47	0.45	0.14	0.14	0.20	
W207	0.20	0.20	5.47	0.45	0.14	0.14	0.20	
W208	0.01	0.01	0.07	0.02	0.01	0.01	0.01	
W209	0.02	0.02	0.30	0.06	0.01	0.03	0.01	
W210	0.26	0.26	6.35	0.79	1.55	0.35	0.17	
W211	0.26	0.26	6.35	0.79	1.55	0.35	0.17	
W212	0.21	0.21	4.33	0.83	1.03	0.33	0.02	
W213	0.24	0.24	4.31	4.14	1.03	0.32	0.02	
Non - Fugitive Total	**264.65**	**18.77**	**128.86**	**131.93**	**196.61**	**18.73**	**10.64**	**0.05**
W100: Fugitives						32.89	32.16	147.27
Total PTE	**264.65**	**18.77**	**128.86**	**131.93**	**196.61**	**51.20**	**42.91**	**147.32**